

REMARKS

Applicant thanks the Examiner for her detailed comments in the Office Action mailed January 16, 2009, and for the interview granted with Applicant's representative, on March 25, 2009.

The "honeycomb" paneling is enclosed by a burn-through[sic]-proof foil" feature has been deleted from claim 36 in the Supplemental Amendment filed October 23, 2009 and acknowledged by the Examiner in the final Office Action mailed January 16, 2009. Therefore, Applicant believes that it is not necessary to amend the drawings in connection with this feature. Applicant and Examiner agreed to the withdrawal of this objection after explaining the meaning of "side by side."

As disclosed in the specification at paragraph [0046], "Fig. 4 shows a (so-called first) honeycomb formation 46 which may be used in the production of honeycomb panels 22 for aircraft construction. The honeycomb formation 46 integrates several paper honeycombs 27, arranged side by side, which (as shown in Fig. 7) are attached (glued) to each other along the circumference." A person having ordinary skill in the art will understand that the term "side by side" refers to the lateral arrangement of honeycombs 27, along the circumference and not a vertical stacking of honeycombs. Applicant submits a replacement page of Fig. 7, in which the drawing is amended by replacing the text with the label 27, to identify the honeycombs arranged side by side:

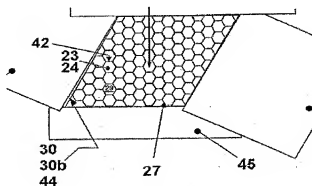


Fig. 7

35 USC §112

Claim 35 has been amended to overcome the rejection under 35 USC §112.

35 USC §103

Humphries et al. fails to disclose, teach or suggest any of the limitations of claims 23 and 36 omitted by Fischer et al. and Heitkamp. How does a vinyl damping sheet 80 address any of the limitations in claims 23 and 36?

Fisher et al.

Now referring to comment 10 in the Office Action, the Applicant traverses the presumption that “flame-and-fume-resistant foil” means the same as “burn-through-proof.” The Examiner and the Applicant agreed that the relevant art was aviation. Burn-through-proof is defined in the specification as fireproof in paragraphs [0039]-[0041]. Fireproof is a term of art defined by the FAA as a standard requiring a sample to withstand exposure at 2000°F for 15 minutes and is contrasted to the term fire resistant, which only requires a sample to withstand 5 minutes exposure at 2000°F (1093°C). This is supported in lines 25-26 of page 2 of the Heitkamp reference. Heitkamp distinguishes low FST (flame, smoke and toxicity) materials from the term “fireproof,” as disclosed at the top of page 2 of the Heitkamp reference. The component of Fischer et al. is further limited as disclosed by Fischer et al. in column 2, lines 6-13 and column 3, lines 30-24 and column 3, lines 35-44 (limited to 800°C for 6 minutes and no greater than 1000°C.) Thus, the “flame-and-fume-resistant” material of Fischer et al., which meets only a low FST standard, does not even meet the lower FAA standard of “fire-resistant,” much less “fireproof” or burn-through-proof, as defined in the specification. The Examiner and the Applicant agreed that Fischer et al. does not disclose any example of a “flameproof” component.

The Applicant traverses the presumption of comment 10 that a flame resistant foil, such as aluminum, is “burn-through-proof,” because Fischer et al. expressly teaches away in column 3, lines 46-47. Specifically, the outermost layer is not burn-through-proof at 1093°C because “...the aluminum foil would normally not withstand the temperature ceiling and would melt.” Thus, the presumption that Fischer et al. teaches a burn-through-proof layer is clearly mistaken,

and no person having ordinary skill in the art would use an outermost layer of aluminum foil as a burn-through-proof layer, based on the teachings of Fischer et al.

The limitations of claim 23 includes not only the elements of the interior panel but also the arrangement of those elements. The drawing of Fischer et al. shows an arrangement of layers that does not read on claim 23. Furthermore, a fair reading of Fischer et al. expressly teaches away from the arrangement of layers of claim 23. Specifically, the background of Fischer et al. teaches away from epoxy-filled, carbon fibre reinforced sandwich panels as used in the aeroplane industry, because "epoxy resins do not meet these (exacting aeroplane industry) requirements," for combustibility and density and toxicity of smoke. Instead, Fischer et al. teaches in column 1, line 60 to column 2, line 5 and column 3, line 60 to column 4, line 2 that it is necessary to arrange in order from the exterior surface: a surface layer (having a comparatively low load of a phenol resin impregnation), a metal foil (aluminum for heat spreading), and comparatively "resin-rich, structural fibrous layers," in order to prevent destruction of the epoxy resin by polycondensation and fire. Therefore, it is not an obvious design choice for a person having ordinary skill in the art to rearrange these surface layers of Fischer et al.

No fair reading of Fischer et al. informs a person having ordinary skill in the art of any advantage of rearranging the layers, as suggested in the Office Action. The object of the invention of Fischer et al. is exactly the arrangement of the layers expressly cited by Fischer et al. to improve combustability, smoke and toxicity to meet low FST (flame, smoke and toxicity) requirements. Indeed, Fischer et al. clearly and unequivocally teaches away from an epoxy-resin filled, carbon fibre reinforced sandwich panel as an exterior layer in column 1, lines 24-37, for lack of meeting these exacting requirements of the aeroplane industry; and Fischer et al. teaches away from the mechanical strength of phenol resins for structural purposes, in column 1, lines 38-44; and Fischer et al. teaches away from use of metal foil as the external-most layer in column 3, lines 45-51. Therefore, the only acceptable solution in Fischer et al. is to include a comparatively less resin impregnated fibrous layer as an external layer, a metal foil, and resin-rich structural layers between the metal foil and a honeycomb core, as shown in the single drawing of Fischer et al. For this reason, the continued reliance on Fischer et al. is mistaken for teaching the elements lacking from Humphries et al. The passages in comment 9 on pages 4

and 5 of the Office Action and are not a fair reading of Fischer et al., because these passages are taken out of context. In context, Fischer et al. shows an arrangement of layers including an embedded metal foil that provides a low FST component.

The layer “of fibrous material” is not the same as the comparatively “resin-rich, structural fibrous layers,” to which it is compared. The fibrous material shield the metal foil and the metal foil shields the resin-rich structural fibrous layers. And, no fair reading of Fischer et al. can conclude that it “would have been obvious...that CFK...cover layers are adhered to honeycomb structures for use in airplanes...such as in the event of fire,” as suggested by comment 9 of the Office Action. Instead, the cover layers are a fibrous layer laminated to a metal foil and an external laminate. Absent the specific arrangements of layers taught by Fischer et al., no person having ordinary skill in the art would expect structural (i.e., epoxy-resin-rich, as defined in Fischer et al.) carbon fibre layers to exhibit flame resistance as cover layers for a honeycomb panel structure, because Fischer et al. expressly teaches away from exposing resin-rich carbon fibre layers to flame.

Heitkamp

Heitkamp expressly teaches away from prior art structures such as Fischer et al. that provide merely low FST. Heitkamp addresses a specific structure intended to meet the standards of flame proofness according to FAA standards, reciting those standards, as known in the art. See attached definitions and testing standards from the FAA, which are well known in the art. At page 2, lines 25-26 of Heitkamp, “...none of the above (prior art references) provides a composite sandwich panel that provides a 15 minute burn-through protection...”. Thus, the Applicant traverses the combinations made in the Office Action, because a person having ordinary skill in the art would have no reasonable expectation of success by mixing and matching an rearranging the elements of Fischer et al., Heitkamp and Humphries et al., as suggested in the Office Action.

Applicant points out that there are examples of a burn-through-proof foil in the specification, such as at paragraphs [0051] and [0060]-[0061], for example.

Claim 36 is amended. The amendment overcomes a rejection based on indefiniteness and does not require further search. A replacement sheet is provided for Figure 7.

Applicant respectfully requests reconsideration of the rejections and objections, and entry of the amendment, and allowance of the pending claims which are now in condition for allowance.

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Respectfully submitted,



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